

[KUDOS]

David McKelvin '03

Keeping Army Strong—Alumnus Uses Engineering Skills in Iraq

BY JIM H. SMITH

A broad smile crossed David McKelvin's face as Associate Professor Ivana Milanovic unlocked a door in United Technologies Hall and flipped a light switch. The dominant feature in the fluids laboratory is a subsonic wind tunnel, a 20-foot-long metal tube with a Plexiglas window. For McKelvin, who last experimented with the tunnel in 2003, it was like bumping into an old pal.

A captain in the Army Corps of Engineers, currently stationed in Buffalo, N.Y., McKelvin came back to the University on a warm afternoon last May for a trip down memory lane. It was in the fluids lab that he and Milanovic first met. She was a new mechanical engineering professor with a PhD from Polytechnic University, in Brooklyn, N.Y., and he was a second-year mechanical engineering student on an ROTC scholarship.

Milanovic and McKelvin quickly discovered they had something very special in common—an interest in the aerodynamics of the delta wing, a triangle-shaped airplane wing used in many military aircraft. At Polytechnic, Milanovic had worked extensively with one of the nation's few collegiate supersonic wind tunnels. She was in the process of adapting her research for Hartford's subsonic wind tunnel when McKelvin showed up.

"He would stay after class and ask a lot of questions," she recalls. "He was always looking for opportunities to get into the labs, always willing to tackle additional projects."

That extra work paid off. By the time he graduated in 2003, McKelvin had completed not only a significant study of delta wings but also a senior design project on hovercraft. "David was a special student," says Milanovic.

After graduation, McKelvin began his military service with half a year of engineering officer training before being sent to Schweinfurt, Germany, where the Army's 9th Engineer Battalion is stationed. From that base he was twice deployed—for 10 months in 2004–05 and again for 13 months in 2006–07—to Iraq.

While there, McKelvin trained Iraqi soldiers and led a 25-member assault-and-obstacle platoon. Their job was to build—in brutal climatic conditions and often under fire—everything from massive landforms to temporary shelters to concrete bunkers and beyond. He also worked with a very remarkable robot, the M1 Panther, a hulking, 43-ton, remote-controlled vehicle designed to help clear minefields.



Capt. David McKelvin '03 with his mentor, Associate Professor Ivana Milanovic

It was important work, largely about protecting military personnel and equipment from enemy fire. "I was able to bring a technical perspective to the work we did, and I also learned a lot from the soldiers who served under me," he says. "My education really paid off, helping me to solve problems and quickly determine the safest and most efficient ways to complete projects." His platoon became accustomed to taking enemy fire, but, he says matter-of-factly, "I brought all of my guys back alive."

While McKelvin was serving abroad, the University was undergoing dramatic changes. Ward College of Technology merged with the College of Engineering in 2005 to become the College of Engineering, Technology, and Architecture (CETA). By the time McKelvin returned to catch up with Milanovic, she was chair of the Department of Mechanical Engineering, and CETA had expanded both its course offerings and the scope of technology available to students, while significantly increasing student enrollment in the bargain.

"When I was here," says McKelvin, "we had very limited space. Now there are more labs, many more computers. It's very exciting."

But some things have not changed. Ivana Milanovic is still fascinated by the special properties of delta wings. And a whole new generation of students has built upon the research David McKelvin conducted in the wind tunnel just six years—and another lifetime—ago. ■